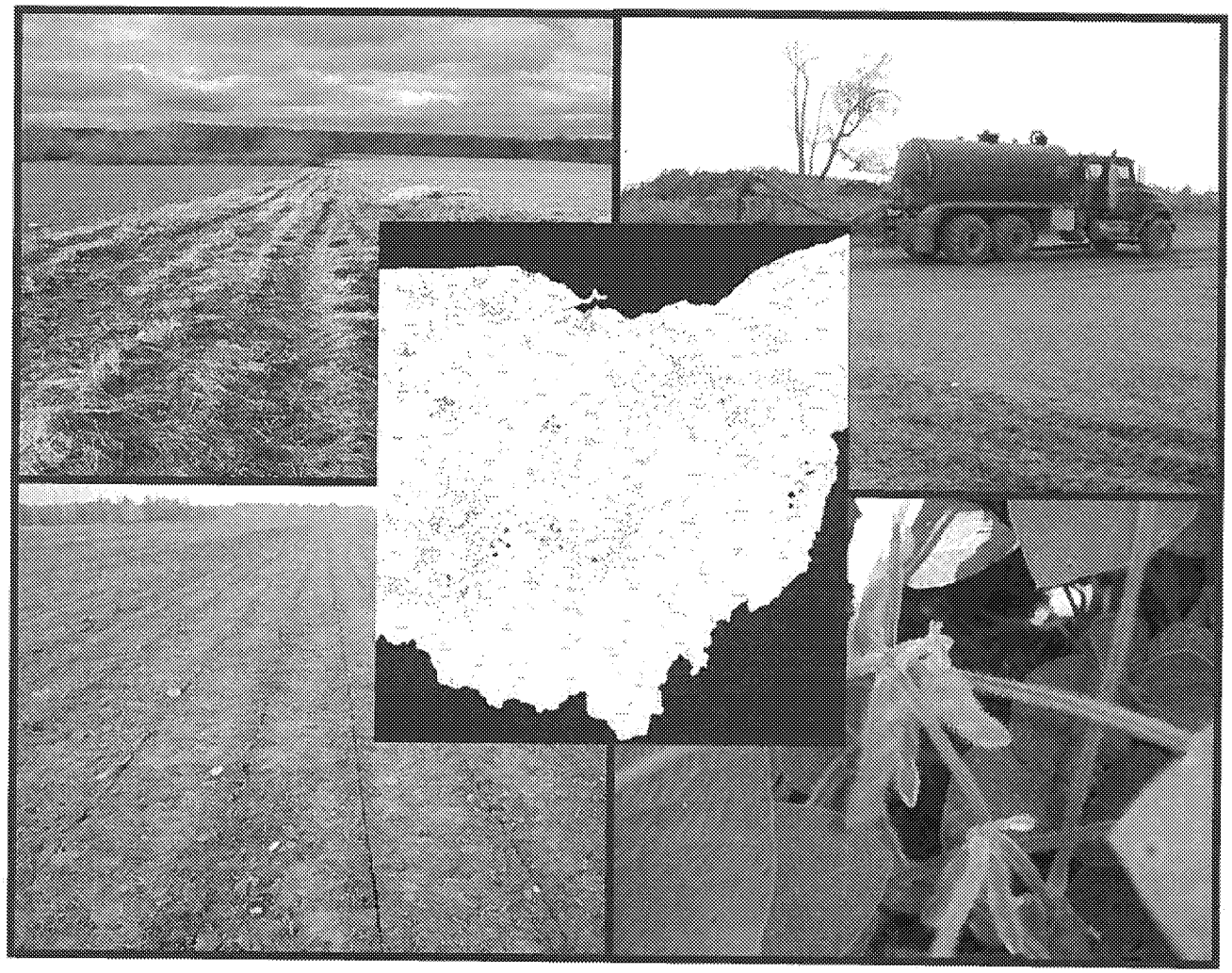
Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

Division of Surface Water

Application for Authorization: Class B Biosolids Beneficial Use Sites



Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Biosolids Treatment Works Information

Treatment works name: Emerald BioEnergy		
Ohio NPDES permit #: 4IN00204*AD		County: Morrow
Mailing address: 461 State Route 61		
City: Marengo	State: OH	Zip: 43334
Operator of record: Taylor Faecher		
Telephone number: (419) 253-5300		
Email address: tfaecher@renergy.com		

Certification Statement

1. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

2. I have read and understand Chapter 3745-40 of the Ohio Administrative Code (OAC) and I agree to beneficially use biosolids in accordance with all applicable beneficial use requirements and restrictions established in Chapter 3745-40 of the Ohio Administrative Code.

3. I agree to only beneficially use biosolids that have satisfied a pathogen reduction alternative and a vector attraction reduction option and have metals concentration below the pollutant ceiling concentrations as established in Chapter 3745-40 of the Ohio Administrative Code.

4. I agree to maintain all applicable records established in Chapter 3745-40 of the Ohio Administrative Code.

Taylor Faecher
Signature

2 / 12 / 18
Date

This form shall be signed by the operator of record for the treatment works, be an original signature, not a copy, and must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

Owner Consent for Beneficial Use

Beneficial use site owner[1]: Ringler Farms LLC		
Mailing address: 461 SR 61		
City: Marengo	State: OH	Zip: 43334
Telephone number: 419 253 5390		
Email address: —		

Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.

2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.

3. I certify that I am holder of legal title to the property described on application form BUA-5, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.

Signature[2] _____ Date 3 / 5 / 18

Original signatures, not copies, must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

[1] For purposes of this form, "beneficial use site owner" means the person who owns the legal rights to the proposed beneficial use site.

[2] In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.

Beneficial Use Site Operator Consent for Beneficial Use

Beneficial use site operator[1]: Ringler Farms LLC		
Mailing address: 461 SR 61		
City: Marengo	State: OH	Zip: 43334
Telephone number: 419 253 5300		
Email address: —		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Signature[2] _____ Date 3 / 5 / 18

Original signatures, not copies, must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

[1] For purposes of this form, "beneficial use site operator" means the person who plants, grows, harvests or otherwise manages feed crops, fiber crops, food crops or pasture land on the proposed beneficial use site.

[2] In the event the operator of the beneficial use site changes, Form BUA-3 must be revised and resubmitted to Ohio EPA.

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Beneficial User Information

Beneficial user[1]: Emerald BioEnergy		
Contact person: Taylor Faecher		
Mailing address: 461 State Route 61		
City: Marengo	State: OH	Zip: 43334
Telephone number: (419) 253-5300		
Email address: tfaecher@renergy.com		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Signature[2]

2 / 12 / 18
Date

Original signatures, not copies, must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

[1] For purposes of this form, the beneficial user means the person who sprays or spreads Class B biosolids onto the surface of the beneficial use site, injects below the surface of the beneficial use site, or incorporates into the soil of the beneficial use site, for the purpose of providing an agronomic benefit.

[2] In the event the beneficial user of the beneficial use site changes, Form BUA-4 must be revised and resubmitted to Ohio EPA.

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: MOS-01-07

Beneficial use site location: NW Corner of 159 and State Route 42

County: Morrow	**Township**:
Latitude: 40.44276	**Longitude**: -82.9548

Total acreage proposed for beneficial use: 81

Type of beneficial use to be performed:

Surface application ☐
Injection or immediate incorporation ■

Ground slope percent:

Less than 15%	■	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u): 6.575

Soil phosphorus (mg/kg): 42.45

Bray Kurtz P1 ☐
Mehlich 3 ■

Bedrock depth (feet): 2.96

Type of crops to be grown:

Crop Type	Expected Yield
Corn	180
Soybeans	55
Wheat	
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
BIgA1	Blount Silt Loam, ground moraine, 0 to 2 percent slopes	D	None
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	■	Sinkhole/UIC class V drainage	☐
Occupied building	■	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	■ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	■ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

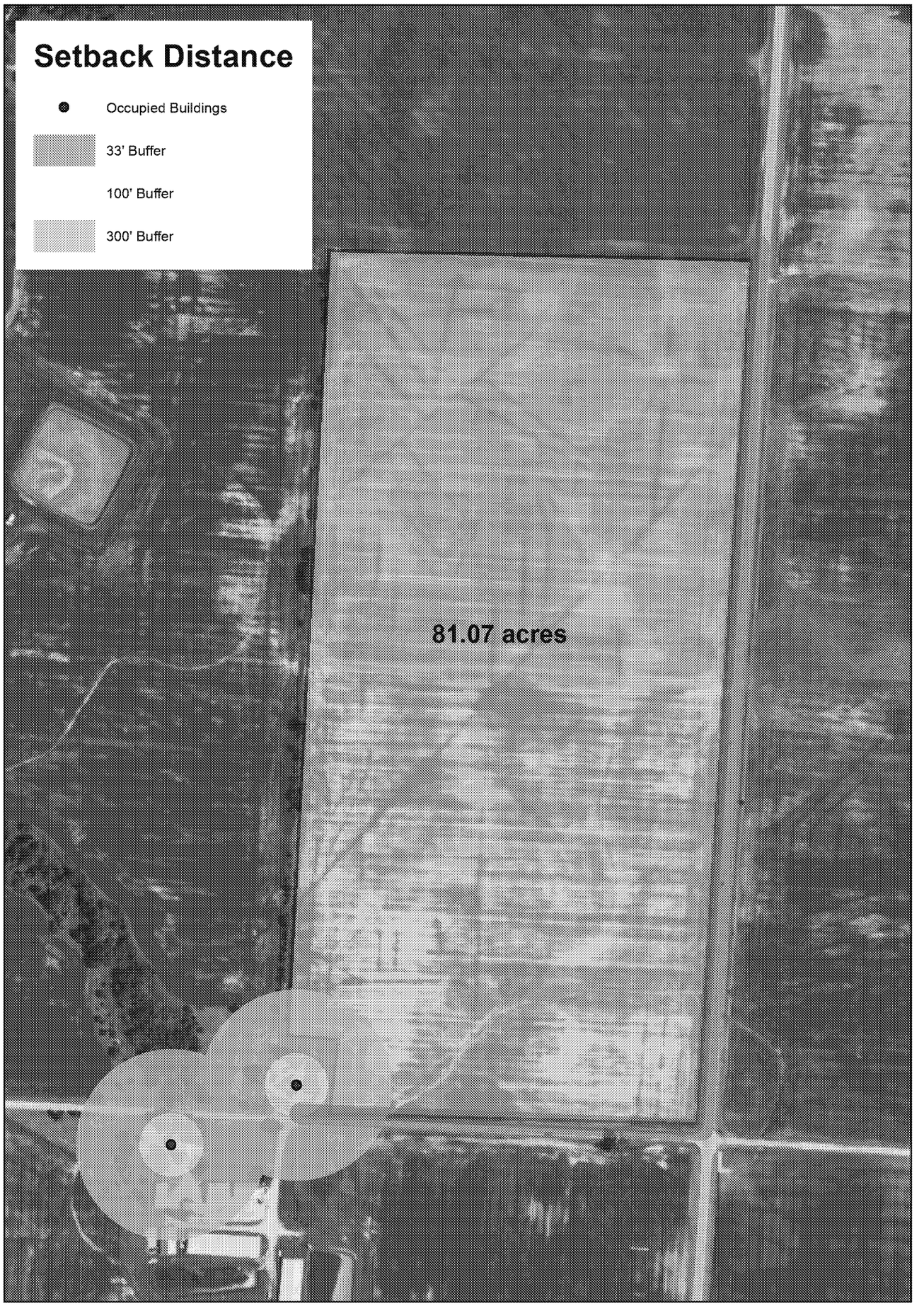
Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following:

- ☐ A soil map of the proposed beneficial use site;
- ☐ A frequency flood class map of the proposed beneficial use site;
- ☐ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code;
- ☐ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled; and
- ☐ A copy of the most recent soil test results identified in this form.

ED_014244_00000831-00008

Setback Distance



Setback Distance		
Total Area: 81.07 acres		
Setbacks:		
	Residence - 300' Buffer	1.68 acres
	Residence - 100' Buffer	0.00 acres
	Surface Waters - 33' Buffer	1.26 acres
	Total Setback Area:	2.94 acres


Soil Map
82° 57' 41" W
82° 56' 49" W
40° 26' 59" N
40° 26' 6" N
333800
334000
334200
334400
334600
334800
4479600
4479300
4479100
4478800
4478700
4478500
4478300
4478100
4477900
158
US Hwy 42
42
Pm
BlgA1
Pm
Pm
BlgA1
BlgA1
BlgA1
GugB1
County Road 159
Map Scale: 1:7,920 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
350
700
1400
2100
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	40.7	50.2%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	1.6	2.0%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	38.8	47.8%
Totals for Area of Interest		**81.1**	**100.0%**

Map—Depth to Any Soil Restrictive Layer

Table—Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	99	40.7	50.2%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	86	1.6	2.0%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	>200	38.8	47.8%
Totals for Area of Interest			**81.1**	**100.0%**


Map—Hydrologic Soil Group
82° 57' 41" W
82° 56' 49" W
40° 26' 59" N
40° 26' 6" N
333800
334000
334200
334400
334600
334800
4479500
4479300
4479100
4478900
4478700
4478500
4478300
4478100
4477900
158
US Hwy 42
42
Pm
BlgA1
Pm
Pm
BlgA1
BlgA1
BlgA1
GugB1
County Road 159
Map Scale: 1:7,920 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
350
700
1400
2100
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	D	40.7	50.2%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	D	1.6	2.0%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	38.8	47.8%
Totals for Area of Interest			**81.1**	**100.0%**

Map—Flooding Frequency Class

Table—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	None	40.7	50.2%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	None	1.6	2.0%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	None	38.8	47.8%
Totals for Area of Interest			**81.1**	**100.0%**

lb/A

BROOKSIDE LABORATORIES, INC. 58251-15

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 2/5/2018

Sample Location SCAR			A1	A2	A3	A4
Sample Identification						
Lab Number			0037-1	0038-1	0039-1	0040-1
Total Exchange Capacity (ME/100 g)			11.25	11.26	12.18	10.30
pH (H_2O 1:1)			5.8	7.3	7.4	7.5
Organic Matter (360°C LOI) %			2.91	2.75	3.30	3.01
Estimated Nitrogen Release		lb/A	78	75	83	80
ANIONS	SOLUBLE SULFUR*	ppm	7	5	5	5
ANIONS / PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	64	82	110	197
		ppm of P	14	18	24	43
	BRAY II	lb/A P as P_2O_5				
		ppm of P				
	OLSEN	lb/A P as P_2O_5				
		ppm of P				
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	2480	3088	3448	2816
		ppm	1240	1544	1724	1408
	MAGNESIUM*	lb/A	422	660	660	580
		ppm	211	330	330	290
	POTASSIUM*	lb/A	154	210	192	282
		ppm	77	105	96	141
	SODIUM*	lb/A	38	26	36	36
		ppm	19	13	18	18
BASE SATURATION PERCENT						
Calcium		%	55.11	68.56	70.77	68.35
Magnesium		%	15.63	24.42	22.58	23.46
Potassium		%	1.75	2.39	2.02	3.51
Sodium		%	0.73	0.50	0.64	0.76
Other Bases		%	5.80	4.10	4.00	3.90
Hydrogen		%	21.00	0.00	0.00	0.00
EXTRACTABLE MINORS						
Boron* (ppm)			0.39	0.59	0.73	0.54
Iron* (ppm)			149	123	195	170
Manganese* (ppm)			65	27	35	49
Copper* (ppm)			1.55	1.73	2.30	1.58
Zinc* (ppm)			2.59	2.24	2.29	1.80
Aluminum* (ppm)			587	487	526	495
OTHER TESTS	Soluble Salts (mmhos/cm)					
	Chlorides (ppm)					
	Bray I P (ppm)		7	13	18	40

a - alkaline soil

* Mehlich III Extractable

lb/A

BROOKSIDE LABORATORIES, INC. 58251-15

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 2/5/2018

Sample Location SCAR			B1	B2	B3	B4
Sample Identification						
Lab Number			0041-1	0042-1	0043-1	0044-1
Total Exchange Capacity (ME/100 g)			12.17	11.65	12.27	12.77
pH (H_2O 1:1)			6.1	7.1	7.3	7.0
Organic Matter (360°C LOI) %			3.36	3.33	2.66	3.10
Estimated Nitrogen Release		lb/A	84	83	73	81
ANIONS	SOLUBLE SULFUR*	ppm	6	4	4	5
PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	211	192	46	55
		ppm of P	46	42	10	12
	BRAY II	lb/A P as P_2O_5				
		ppm of P				
	OLSEN	lb/A P as P_2O_5				
		ppm of P				
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	2990	3426	3650	3768
		ppm	1495	1713	1825	1884
	MAGNESIUM*	lb/A	488	526	576	604
		ppm	244	263	288	302
	POTASSIUM*	lb/A	266	266	138	150
		ppm	133	133	69	75
	SODIUM*	lb/A	22	24	30	36
		ppm	11	12	15	18
BASE SATURATION PERCENT						
Calcium		%	61.42	73.52	74.37	73.77
Magnesium		%	16.71	18.81	19.56	19.71
Potassium		%	2.80	2.93	1.44	1.51
Sodium		%	0.39	0.45	0.53	0.61
Other Bases		%	5.20	4.30	4.10	4.40
Hydrogen		%	13.50	0.00	0.00	0.00
EXTRACTABLE MINORS						
Boron* (ppm)			0.73	0.74	0.78	0.85
Iron* (ppm)			382	210	145	164
Manganese* (ppm)			11	14	16	10
Copper* (ppm)			1.60	2.29	1.95	2.12
Zinc* (ppm)			1.94	2.01	1.09	1.21
Aluminum* (ppm)			569	537	499	552
OTHER TESTS	Soluble Salts (mmhos/cm)					
	Chlorides (ppm)					
	Bray I P (ppm)		42	33	6	7

* Mehlich III Extractable

lb/A

BROOKSIDE LABORATORIES, INC. 58251-15

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 2/5/2018

Sample Location SCAR			C1	C2	C3	C4
Sample Identification						
Lab Number			0045-1	0046-1	0047-1	0048-1
Total Exchange Capacity (ME/100 g)			10.80	16.22	18.68	16.92
pH (H_2O 1:1)			6.9	6.9	6.2	7.1
Organic Matter (360°C LOI) %			2.34	4.59	3.93	3.72
Estimated Nitrogen Release		lb/A	67	96	89	87
ANIONS	SOLUBLE SULFUR*	ppm	7	5	4	8
ANIONS / PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	110	311	183	559
		ppm of P	24	68	40	122
	BRAY II	lb/A P as P_2O_5				
		ppm of P				
	OLSEN	lb/A P as P_2O_5				
		ppm of P				
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	2994	4792	5000	5392
		ppm	1497	2396	2500	2696
	MAGNESIUM*	lb/A	568	676	596	496
		ppm	284	338	298	248
	POTASSIUM*	lb/A	180	310	326	444
		ppm	90	155	163	222
	SODIUM*	lb/A	32	26	30	34
		ppm	16	13	15	17
BASE SATURATION PERCENT						
	Calcium	%	69.31	73.86	66.92	79.67
	Magnesium	%	21.91	17.37	13.29	12.21
	Potassium	%	2.14	2.45	2.24	3.36
	Sodium	%	0.64	0.35	0.35	0.44
	Other Bases	%	4.50	4.50	5.20	4.30
	Hydrogen	%	1.50	1.50	12.00	0.00
EXTRACTABLE MINORS						
	Boron* (ppm)		0.63	0.90	1.07	1.10
	Iron* (ppm)		133	205	203	251
	Manganese* (ppm)		66	10	14	13
	Copper* (ppm)		1.34	2.86	3.06	3.30
	Zinc* (ppm)		3.65	2.17	2.19	3.62
	Aluminum* (ppm)		504	672	709	555
OTHER TESTS	Soluble Salts (mmhos/cm)					
	Chlorides (ppm)					
	Bray I P (ppm)		22	54	33	128

* Mehlich III Extractable

lb/A

BROOKSIDE LABORATORIES, INC.

58251-15

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 2/5/2018

Sample Location SCAR			D1	D2	D3	D4
Sample Identification						
Lab Number			0049-1	0050-1	0051-1	0052-1
Total Exchange Capacity (ME/100 g)			16.81	13.95	11.58	20.14
pH (H_2O 1:1)			6.4	7.1	5.7	6.6
Organic Matter (360°C LOI) %			4.70	4.97	2.55	4.58
Estimated Nitrogen Release		lb/A	97	100	71	96
ANIONS	SOLUBLE SULFUR*	ppm	6	7	9	8
ANIONS / PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	421	279	119	234
		ppm of P	92	61	26	51
	BRAY II	lb/A P as P_2O_5				
		ppm of P				
	OLSEN	lb/A P as P_2O_5				
		ppm of P				
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	4344	3918	2318	5574
		ppm	2172	1959	1159	2787
	MAGNESIUM*	lb/A	708	748	492	856
		ppm	354	374	246	428
	POTASSIUM*	lb/A	456	278	148	286
		ppm	228	139	74	143
	SODIUM*	lb/A	30	38	32	44
		ppm	15	19	16	22
BASE SATURATION PERCENT						
Calcium		%	64.60	70.22	50.04	69.19
Magnesium		%	17.55	22.34	17.70	17.71
Potassium		%	3.48	2.55	1.64	1.82
Sodium		%	0.39	0.59	0.60	0.47
Other Bases		%	5.00	4.30	6.00	4.80
Hydrogen		%	9.00	0.00	24.00	6.00
EXTRACTABLE MINORS						
Boron* (ppm)			1.49	1.74	0.36	0.66
Iron* (ppm)			384	349	277	293
Manganese* (ppm)			6	7	12	8
Copper* (ppm)			2.58	2.73	1.23	4.18
Zinc* (ppm)			2.47	2.49	2.02	2.88
Aluminum* (ppm)			703	617	818	787
OTHER TESTS	Soluble Salts (mmhos/cm)					
	Chlorides (ppm)					
	Bray I P (ppm)		80	51	15	40

* Mehlich III Extractable

lb/A

BROOKSIDE LABORATORIES, INC. 58251-15

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 2/5/2018

Sample Location SCAR			E1	E2	E3	E4
Sample Identification						
Lab Number			0053-1	0054-1	0055-1	0056-1
Total Exchange Capacity (ME/100 g)			13.33	14.91	13.01	18.89
pH (H_2O 1:1)			5.1	5.8	6.3	5.9
Organic Matter (360°C LOI) %			2.86	2.78	2.94	4.12
Estimated Nitrogen Release		lb/A	77	76	79	91
ANIONS	SOLUBLE SULFUR*	ppm	12	6	6	6
ANIONS / PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	270	105	110	229
		ppm of P	59	23	24	50
	BRAY II	lb/A P as P_2O_5				
		ppm of P				
	OLSEN	lb/A P as P_2O_5				
		ppm of P				
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	1894	3206	3204	4504
		ppm	947	1603	1602	2252
	MAGNESIUM*	lb/A	390	634	648	660
		ppm	195	317	324	330
	POTASSIUM*	lb/A	218	154	166	254
		ppm	109	77	83	127
	SODIUM*	lb/A	60	26	28	46
		ppm	30	13	14	23
BASE SATURATION PERCENT						
	Calcium	%	35.52	53.76	61.57	59.61
	Magnesium	%	12.19	17.72	20.75	14.56
	Potassium	%	2.10	1.32	1.64	1.72
	Sodium	%	0.98	0.38	0.47	0.53
	Other Bases	%	7.20	5.80	5.10	5.60
	Hydrogen	%	42.00	21.00	10.50	18.00
EXTRACTABLE MINORS						
	Boron* (ppm)		0.42	0.37	0.40	0.66
	Iron* (ppm)		341	219	211	353
	Manganese* (ppm)		20	11	7	5
	Copper* (ppm)		1.57	1.54	1.45	3.12
	Zinc* (ppm)		2.01	2.20	2.13	2.26
	Aluminum* (ppm)		1038	785	657	829
OTHER TESTS	Soluble Salts (mmhos/cm)					
	Chlorides (ppm)					
	Bray I P (ppm)		40	15	15	39

* Mehlich III Extractable